

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

SMITH, Maurice et al.

Serial No. : 10/672,212

Filed: September 26, 2003

SYSTEM AND METHOD FOR  
IDENTIFYING, REPORTING, AND  
EVALUATING PRESENCE OF  
SUBSTANCE

Docket No.: 34171

Confirmation No.: 2888

Group Art Unit No.: 3689

Customer No.: 23589

Examiner: Riviere, Heidi M.

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## APPEAL BRIEF

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**APPELLANTS' BRIEF ON APPEAL**

In response to the final Office Action dated May 10, 2010, and the Notice of Appeal filed July 22, 2010, Appellants' Brief on Appeal in accordance with 37 C.F.R. § 41.37 is hereby submitted. The Examiner's final rejections of claims 1-4 and 6-11, as last amended, are herein appealed, and allowance of said claims is respectfully requested.

Please deduct the requisite fee of \$540.00 from Deposit Account 19-0522 as required by 37 C.F.R. § 41.20. Any additional fee which is due in connection with this Brief should be applied against Deposit Account No. 19-0522.

Respectfully submitted,

By

A handwritten signature in black ink, appearing to read "Thomas B. Luebbering", written over a horizontal line.

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**I. REAL PARTY IN INTEREST**

Maurice Smith, Michael Lusby, Arthur Van Hook, Charles J. Cook, Edward G. Wenski, and David Solyom are the inventors of the claimed invention. Maurice Smith, Michael Lusby, Arthur Van Hook, Charles J. Cook, Edward G. Wenski, and David Solyom have assigned all of their rights, title, and interest in the invention, application, and any Letters Patent issuing therefrom to Honeywell Federal Manufacturing and Technologies, LLC, a corporation duly organized under the laws of Missouri. The assignment information is recorded in the Patent Office at Reel/Frame 014950/0156. Therefore, Honeywell Federal Manufacturing and Technologies, LLC is the real party in interest.

## **II. RELATED APPEALS AND INTERFERENCES**

No related appeals or interferences are known to the Appellant which may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

This application was filed on September 26, 2003, with 5 claims, of which claims 1, 3 and 5 were in independent format. Claims 1-4 were amended, claim 5 cancelled, and claims 6-7 added in an Amendment dated January 11, 2008. Claims 1 and 3 and claims 8-10 were added in an Amendment dated June 4, 2008. Claim 10 was amended and claim 11 added in an Amendment dated October 10, 2008. Claims 1 and 11 were amended in an Amendment dated April 1, 2009. Claims 1, 3, and 11 were amended in an Amendment dated October 8, 2009. Claims 1-4 and 6-11 are currently pending with claims 1 and 3 being independent. The Examiner's final rejections of claims 1-4 and 6-11, as last amended, are herein appealed.

#### **IV. STATUS OF AMENDMENTS**

All amendments submitted by Appellant have been entered. No amendments have been filed subsequent to the final Office Action of May 10, 2010.



## V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter relates to a method of evaluating a threat posed by a substance using remote sensing units (IRAM units 12) and control units (OATS units 14). Application, p. 11, ll. 29 - p. 12, ll. 2; and p. 5, ll. 7-15. Remotely obtaining images, such as magnified images, of the substance with the IRAM units 12, along with other sensor information collected by the IRAM units 12, allows remote identification of the substance without taking the risk of exposing a person to the potentially hazardous substance. Id. p.14, ll. 16-20; p. 15, ll. 1-6. Advantageously, some methods of this invention include airdropping the IRAM units 12, allowing fast deployment in a manner such that no other equipment or people are exposed to a potentially hazardous substance. This is made possible by equipping the IRAM units 12 with a self-righting mechanism 62 to properly orient the IRAM units 12 in relation to the ground or gravity following deployment. Id. p. 19, ll. 1-16.

The invention of independent claim 1 is directed toward a method for evaluating a threat posed by a substance. Application, p. 11, ll. 29 - p. 12, ll. 2. The method includes obtaining an image of the substance with one or more remotely controllable sensing units 12 and transmitting the image of the substance from the remotely controllable sensing units to a control unit 14 configured to automatically identify the substance. Id. p.14, ll. 16-20; p. 16, ll. 23-26; and p. 19, ll. 18-20. The method includes generating a report with the control unit 14, the report comprising the image of the substance and identification information regarding the substance as determined by the control unit 14. Id. p. 12, ll. 7-11; p. 26, ll. 8-10; p. 27, ll. 28-32. The method also includes a step of uploading the report, via the control unit 14, to a secure remote server 18 via a system chosen from the group consisting of a cell phone network and a satellite phone network. Id. p.19, ll. 27 - p. 20, ll. 6. Furthermore, the method of claim 1 includes notifying, via the control unit 14, at least some members of a hierarchy of authorities, including threat response authorities and evaluation authorities, of the report. Id. p. 22, ll. 14-25; p. 25, ll. 10-21. The evaluation authorities include a

plurality of experts having knowledge relevant to making a high-level threat assessment. Id. p. 25, ll. 10-21. Finally, the method of claim 1 includes instructing at least some members of the hierarchy of authorities, via the control unit 14, to access the report on the remote server via a wide area network. Id. p. 25, ll. 7-9; p. 26, ll. 3-10.

The invention of independent claim 3 is also directed toward a method of evaluating a threat posed by a substance. Application, p. 11, ll. 29 - p. 12, ll. 2. The method includes obtaining an image of the substance with one or more remotely controllable sensing units 12 and transmitting the image of the substance from the remotely controllable sensing units to a control unit 14 configured to automatically identify the substance and generate a corresponding report. Id. p.14, ll. 16-20; p. 16, ll. 23-26; p. 19, ll. 18-20; and p. 27, ll. 28-32. The report includes a magnified image of the substance. Id. p. 15, ll. 1-6. The method of claim 3 also includes uploading the report, via the control unit 14, to a remote server 18 via a system chosen from the group consisting of a cell phone network and a satellite phone network. Id. p.19, ll. 27 - p. 20, ll. 6. The method includes determining an actual geographic location of the remote sensing unit 12 that detected the substance using a GPS device 24 located on the remote sensing unit 12, communicating the actual geographic location to the control unit 14, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location. Id. p. 22, ll. 7-25. The method further includes notifying, via the control unit 14, the appropriate local reporting authority of the report in accordance with the appropriate local reporting policy. Id. p. 22, ll. 14-25; p. 25, ll. 29-32. The method then includes the step of determining, via the control unit 14, a hierarchy of threat evaluators, including the appropriate local reporting authority and a plurality of experts having knowledge relevant to making a high-level threat assessment. Id. p. 22, ll. 14-25; p. 25, ll. 10-21. Finally, the method of claim 3 includes instructing at least some members of the hierarchy of threat

evaluators to access the report on the remote server via a wide area network. Id. p. 25. ll. 7-9; p. 26, ll. 3-10.

The invention of dependent claim 10 is directed toward the method of claim 1, and further provides that the remote sensing units are deployed by being airdropped into an area containing a potentially hazardous substance. Application, p. 19, ll. 2-4; p. 26, ll. 19-22; and p. 29, ll. 2-4.

The invention of dependent claim 11 is directed toward the method of claim 10, and further provides that the remote sensing units act, upon hitting ground, to properly position various operational elements of the remote sensing units for sample collection. Application, p. 19, ll. 1-16; and p. 26, ll. 30-32.

Appellant notes that the page and line numbers from the specification cited above refer to specific portions of the specification where specific support for the claimed subject matter may be found. However, support for the claimed subject matter may also be found throughout the specification and drawing figures.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- The rejection of independent Claim 1 and its dependent claims under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,490,530 to Wyatt in view of U.S. Patent No. 6,422,508 to Barnes.
- The rejection of independent Claim 3 and its dependent claims under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,490,530 to Wyatt in view of U.S. Patent No. 6,422,508 to Barnes.
- The rejection of Claim 3 and its dependent claims under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,490,530 to Wyatt in view of 42 USC 11023 (a).
- The rejection of dependent Claim 10 under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,490,530 to Wyatt in view of U.S. Patent No. 6,422,508 to Barnes.
- The rejection of dependent Claim 11 under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,490,530 to Wyatt in view of U.S. Patent No. 6,422,508 to Barnes.

## **VII. ARGUMENTS**

### **A. Summary of U.S. Patent No. 6,490,530 issued to Wyatt (hereinafter "Wyatt")**

Wyatt discloses an aerosol hazard classification and early warning network with a number of detector stations. (Wyatt, Abstract). The detector stations measure and classify aerosol particles one at a time using multiangle light scattering and reporting processed data via telecommunication links to a central control station (Wyatt, Col. 8, ll. 34-45). An alarm processor 22 of Wyatt may send updated information by alarm telemetry means 23 to various civil, police, emergency, and other agencies responsible for population health and safety throughout and surrounding the monitored region (Wyatt, Col. 13, ll. 66-Col. 14, ll. 3). Microprocessors of each detector station are programmed to analyze digitized multiangle light scattering signals collected from each traversing aerosol particle and catalog these particles, while the central station monitors the evolution of the reports received from the individual detector stations in real time and makes judgements as to the extent of the aerosol threat (Wyatt, Col. 10, ll. 28-48).

### **B. Summary of U.S. Patent No. 6,422,508 to Barnes (hereinafter "Barnes")**

Barnes discloses a robotically-controlled, steerable, gimbal-mounted, virtual broadband hyperspectral sensor system 20 used to gather and track images (Barnes, Col. 5, ll. 57-58). The hyperspectral imaging technology identifies spectral signatures associated with target classes such as airborne gasses, vapors, or aerosols by comparing their spectral data against known spectral databases (Barnes, Col. 4, ll. 34-46). The system 20 may be mounted on an aircraft or ground vehicle (Barnes, Col. 4, ll. 52). The system 20 may include GPS for determining a relative target location based on the system's location. (Barnes, Col. 7, ll. 35-54). The data obtained by a spectral sensor mounted to the steerable gimbal may be transmitted to a ground station for further analysis and processing (Barnes, Claim 34).

**C. Summary of 42 USC 11023 (a)**

42 USC 11023 (a) discloses requirements for an owner or operator of a facility to report toxic chemicals manufactured, processed, or used in large quantities during the calendar year to officials of the State designated by the Governor (42 USC 11023 (a)). This is a federal policy and does not disclose anything about local reporting policies. This section of the U.S. Code requires a form to be submitted to a local (i.e., State) authority designated by the Governor.

**D. Summary of Arguments**

Appellants respectfully submit that the Examiner's rejections should not be sustained because:

1. The Examiner has failed to identify a prior art reference or combination of references that teach or suggest each limitation of claim 1.
2. The Examiner has failed to identify a prior art reference or combination of references that teach or suggest each limitation of claim 3.
3. The Examiner has failed to identify a prior art reference or combination of references that teach or suggest each limitation of claim 10.
4. The Examiner has failed to identify a prior art reference or combination of references that teach or suggest each limitation of claim 11.

**E. Legal Discussion of Obviousness**

Obviousness can be a problematic basis for rejection because the Examiner, in deciding that a feature is obvious, has the benefit of the Applicant's disclosure as a blueprint and guide. In contrast, one with ordinary skill in the art would have no such guide, in which light even an exceedingly complex solution may seem easy or obvious. Furthermore, once an obviousness rejection has been made, the Applicant is in the exceedingly difficult position of having to prove a negative proposition (i.e., non-obviousness) in order to overcome the rejection. For these reasons, MPEP § 2142 places upon the Examiner the initial burden of establishing a *prima facie* case, which requires, among other things, that there be a clear articulation of the reason(s) why the claimed invention would have been obvious to one with ordinary skill to modify the reference or to combine

reference teachings. If the Examiner fails to establish the requisite *prima facie* case, the rejection is improper and will be overturned. See *In re Rijckaert*, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Only if the Examiner's burden is met does the burden shift to the Applicant to provide evidence to refute the rejection.

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) (reversing an obviousness rejection where there was no suggestion to modify a prior art mower strip to make it entirely flexible as required by applicant's claims toward a flexible landscape edging strip); see also *In re Gordon*, 221 USPQ2d 1125, 1127 (Fed. Cir. 1984). Additionally, "if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP § 2143.01 V. Further yet, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Finally, references cannot be combined or modified where the prior art teaches away from such combination or modification. *United States v. Adams*, 383 U.S. 39, 50-52 (1966).

**F. The Examiner has failed, with regard to the rejection of claim 1 over Wyatt in view of Barnes under 35 U.S.C. § 103(a), to establish the requisite *prima facie* case of obviousness.**

In the Final Office Action, dated May 10, 2010 (hereinafter OA 5-10-10), the Examiner asserted that claim 1 is unpatentable over Wyatt in view of Barnes. OA 5-10-10, p. 3. That is, the Examiner conceded that Wyatt does not expressly teach "the report comprising the image of the substance and identification regarding the substance as determined by the control unit," as recited in claim 1. OA 5-10-10, p. 5, last paragraph. However, the Examiner asserted that this would have been obvious in view of the teachings of Barnes. Appellant respectfully disagrees.

Barnes does not explicitly disclose generating a report, nor that the report comprises the image of the substance and identification information regarding the substance as determined by the control unit. Though Barnes teaches gathering and tracking images (Barnes, Col. 5, ll. 57-58), it does not disclose generating reports, nor generating a report comprising the image of the substance and identification information. Rather, Barnes teaches using images for real-time tracking. Moreover, the Examiner did not cite any other references that, when combined with Barnes, discloses this limitation.

**G. The Examiner has failed, with regard to the rejection of claim 3 over Wyatt in view of Barnes under 35 U.S.C. § 103(a), to establish the requisite prima facie case of obviousness.**

In the Final Office Action (OA 5-10-10), the Examiner asserted that claim 3 is unpatentable over Wyatt in view of Barnes. OA 5-10-10, p. 7-11. That is, the Examiner conceded that Wyatt does not expressly teach steps a1, a2, and c of claim 3. However, the Examiner asserted that these steps and the other steps of claim 3 would have been obvious in view of the teachings of Barnes. Appellant respectfully disagrees.

Specifically, the Examiner admits on page 6 of OA 5-10-10 that Wyatt does not teach "the report comprising an image of the substance". Therefore, Wyatt can not possibly teach "wherein the report includes a magnified image of the substance", as in claim 3. Furthermore, Barnes also does not teach "wherein the report includes a magnified image of the substance", as in claim 3.

Nevertheless, the Examiner asserts on page 8 of OA 5-10-10 that Wyatt teaches detector stations capable of measuring and classifying aerosol particles (Wyatt, Col. 8, ll. 34-44) and detector stations capable of performing a set of scattered light measurements by which the target aerosol particles are well classified and/or identified, one-at-a-time, at each locale where they are detected (Wyatt, Col. 5, ll. 25-29). The Examiner notes that this results in a magnified image (OA 5-10-10, p. 8, ll. 4). Appellant respectfully disagrees.



Particles of a substance being classified or identified one-at-a-time, as disclosed in Wyatt, does not teach nor imply a magnified image of the substance. Instead, as described in Wyatt, Col. 8, ll. 46-51, the sampled aerosol stream is diluted so that only a single particle is in the laser beam at any moment, and then light scattering *measurements* are made on each transiting particle. Wyatt discloses measurements of individual particles of a substance, but does not teach or suggest a magnified image of the substance to do so.

The scattered light measurements as taught in Wyatt do not result in a magnified image of the substance. Instead, as disclosed in Wyatt, Col. 11, ll. 30 to Col. 12, ll. 19, scattered light measurements result in a set of *intensity values* of light scattered by the passage of the particles through a light beam. An analysis of these intensity values (not of a magnified image) is used to classify and/or identify the target aerosol particles in Wyatt. Therefore, Wyatt does not teach or suggest providing a corresponding report comprising a magnified image of the substance as recited in Claim 3.

Barnes also does not teach or suggest a report comprising a magnified image of the substance, nor does Barnes teach or suggest anything about magnified images in general. Rather, Barnes simply discloses optionally using a color video camera (Barnes, Col. 4, ll. 20). This does not explicitly nor inherently teach a report comprising a magnified image.

Furthermore, neither Wyatt nor Barnes disclose step c of claim 3, which recites “determining an actual geographic location of a remote sensing unit detecting the substance using a GPS device located on the remote sensing unit, communicating the actual geographic location to the control unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance.” The Examiner concedes that Wyatt does not explicitly disclose that the determining step is provided by a GPS device located on the remote sensing unit, communicating the actual geographic location to the control unit. However, the Examiner asserts that step c as recited above is taught by Barnes. OA 5-10-10, p. 9, second paragraph.

Barnes discloses that the system 20 may include GPS for determining a relative target location based on the system’s location. (Barnes, Col. 7, ll. 35-54). However, Barnes does not

disclose communicating the actual geographic location to the control unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance, as recited in claim 3.

Furthermore, because Wyatt does not disclose determining an actual geographic location using GPS, it of course does not disclose communicating the actual geographic location to the control unit. Wyatt discloses sending updated information by alarm telemetry means 23 to various civil, police, emergency, and other agencies responsible for population health and safety throughout and surrounding the monitored region, but this neither teaches or suggests sending actual geographic location information to a control unit. Thus, neither Wyatt nor Barnes disclose communicating the actual geographic location to the control unit and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance, as recited in claim 3.

**H. The Examiner has failed, with regard to the rejection of claim 3 over Wyatt in view of 42 USC 11023 (a) under 35 U.S.C. § 103(a), to establish the requisite prima facie case of obviousness.**

In the Final Office Action (OA 5-10-10, p. 14), the Examiner asserted that claim 3 is also unpatentable over Wyatt in view of 42 USC 11023 (a). OA 5-10-10, p. 14-15. That is, the Examiner asserts that if the step of “identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance,” is not disclosed in Wyatt, it is taught in 42 USC 11023 (a). Appellant respectfully disagrees.

Contrary to the Examiner’s assertion, the 42 USC 11023 (a) reference does not disclose “identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance,” as recited in claim 3, nor any other elements of claim 3. Specifically, as mentioned above, this section of the U.S. Code requires a form to be submitted to a local (i.e., State) authority designated by the Governor, but is silent as to a method of identifying an appropriate local reporting authority.

Furthermore, this section of the U.S. code does not make any mention of identifying a local reporting policy, but rather discloses a federal policy for reporting a toxic chemical to a local (i.e., State) official. The mere fact that this federal policy exists does not teach or disclose a step of identifying an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance.

Furthermore, Wyatt does not disclose “determining an actual geographic location of a remote sensing unit detecting the substance using a GPS device located on the remote sensing unit, communicating the actual geographic location to the control unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance,” as recited in claim 3. Therefore, Wyatt and 42 USC 11023 (a), taken separately or in combination with each other, do not disclose each element of claim 3. Appellants therefore respectfully submit that claim 3 is allowable over all the prior art of record.

**I. The Examiner has failed, with regard to the rejection of claim 10 over Wyatt in view of Barnes under 35 U.S.C. § 103(a), to establish the requisite prima facie case of obviousness.**

In the Final Office Action (OA 5-10-10) the Examiner asserted that claim 10 is unpatentable over Wyatt in view of Barnes. OA 5-10-10, p.13. That is, the Examiner conceded that Wyatt does not expressly teach “wherein the remote sensing units are deployed by being airdropped into an area containing a potentially hazardous substance,” as recited in claim 10. However, the Examiner asserted that this would have been obvious in view of the teachings of Barnes. Appellant respectfully disagrees.

Barnes discloses a sensor system for locating targets and exploiting hyperspectral and ultraspectral imaging and non-imaging signature information in real-time from an aircraft. (Barnes, Col. 4, ll. 8-15). The system may be mounted on the aircraft. (Barnes, Col. 4, ll. 52). Locating targets in realtime from an aircraft and/or a system mounted on an aircraft does NOT teach or suggest airdropping remote sensing units into an area containing a potentially hazardous substance,

as required by claim 10. Indeed, disclosing a system mounted to an aircraft teaches away from airdropping the sensing units, since mounting the system to the aircraft is a means of preventing the system from dropping out of or off of the aircraft.

**J. The Examiner has failed, with regard to the rejection of claim 11 over Wyatt in view of Barnes under 35 U.S.C. § 103(a), to establish the requisite *prima facie* case of obviousness.**

In the Final Office Action (OA 5-10-10), the Examiner asserted that claim 11 is unpatentable over Wyatt in view of Barnes. OA 5-10-10, p.13. That is, the Examiner conceded that Wyatt does not expressly teach "wherein the remote sensing units act upon hitting ground to properly position various operational elements of the remote sensing units for sample collection," as recited in claim 10. However, the Examiner asserted that this would have been obvious in view of the teachings of Barnes. Appellant respectfully disagrees.

As explained in section VII, subsection I above, Barnes does not disclose airdropping the remote sensing units, as in claim 10 from which claim 11 depends. Furthermore, because the system in Barnes is not deployed by being airdropped, there is no need to properly position its operational elements for sample collection upon hitting ground. The mere fact that the system in Barnes is steered by an operator (as noted by the Examiner, OA 5-10-10, p. 13, ll.13-14) does not inherently disclose acting at a prescribed point in time - i.e., upon hitting ground - to properly position various operational elements of the remote sensing unit for sample collection.

**K. Conclusion**

In summary, Examiner has not established a *prima facie* case of obviousness of independent claim 1 or 3 of the application under appeal. Nor has the Examiner established a proper *prima facie* case of obviousness of dependent claims 10 or 11. Assuming *arguendo* that the Examiner has

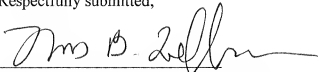
established a *prima facie* case of obviousness, Appellant submits it has presented sufficient objective evidence to rebut any *prima facie* case. Thus, Appellant respectfully requests reversal of the Examiner's final rejection of claims 1, 3, 10, and 11 for at least the reasons discussed above.

In addition, while dependent claims 2, 4, and 6-9 recite additional patentable features, these claims should also be patentable as depending from patentable independent claims. *In re Fine*, 837 F.2d at 1075, 5 U.S.P.Q.2d at 1600.

According to all of the foregoing, reversal of all of the Examiner's rejections is proper, and such favorable action is respectfully solicited.

Respectfully submitted,

By



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### VIII. CLAIMS APPENDIX

The claims on appeal are as follows:

1. A method of evaluating a threat posed by a substance, the method comprising the steps of:

- (a1) obtaining an image of the substance with one or more remotely controllable sensing units;
- (a2) transmitting the image of the substance from the one or more remotely controllable sensing units to a control unit configured to automatically identify the substance;
- (b) generating a report with the control unit, the report comprising the image of the substance and identification information regarding the substance as determined by the control unit;
- (c) uploading the report, via the control unit, to a secure remote server via a system chosen from the group consisting of a cell phone network and a satellite phone network;
- (d) notifying, via the control unit, at least some members of a hierarchy of authorities, including threat response authorities and evaluation authorities, of the report, wherein the evaluation authorities include a plurality of experts having knowledge relevant to making a high-level threat assessment; and
- (e) instructing at least some members of the hierarchy of authorities, via the control unit, to access the report on the remote server via a wide area network.

2. The method as set forth in claim 1, further including the step of providing the remote server with evaluation tools for automatically evaluating the report in light of other relevant data.

3. A method of evaluating a threat posed by a substance, the method comprising the steps of:

- (a1) obtaining an image of the substance with one or more remotely controllable sensing units;
- (a2) transmitting the image of the substance from the one or more remotely controllable sensing units to a control unit configured to automatically detect and identify the substance and generate a corresponding report, wherein the report includes a magnified image of the substance;
- (b) uploading the report, via the control unit, to a remote server via a system chosen from the group consisting of a cell phone network and a satellite phone network;
- (c) determining an actual geographic location of a remote sensing unit detecting the substance using a GPS device located on the remote sensing unit, communicating the actual geographic location to the control unit, and identifying an appropriate local reporting authority and an appropriate local reporting policy based upon the actual geographic location of the remote sensing unit detecting the substance;
- (d) notifying, via the control unit, the appropriate local reporting authority of the report in accordance with the appropriate local reporting policy;
- (e) determining, via the control unit, a hierarchy of threat evaluators, including the appropriate local reporting authority and a plurality of experts having knowledge relevant to making a high-level threat assessment; and
- (f) instructing at least some members of the hierarchy of threat evaluators to access the report on the remote server via a wide area network.

4. The method as set forth in claim 3, further including the step of providing the remote server with evaluation tools for automatically evaluating the report in light of other relevant data

5. (Cancelled)

6. The method as set forth in claim 1, wherein the response authorities are chosen from the group consisting of local first responders, state agencies, state departments, regional agencies, regional departments, national departments, and national agencies.

7. The method as set forth in claim 1, wherein the evaluation authorities include experts on subjects chosen from the group consisting of medical issues relating to exposure to chemical substances, medical issues relating to exposure to biological substances, medical issues relating to exposure to radioactive substances, law, law enforcement, policy, doctrinal issues, historical cases, modeling, and simulation.

8. The method as set forth in claim 1, wherein the image of the substance is a microscope-magnified image.

9. The method as set forth in claim 1, further comprising collecting the substance with a sample examination cassette including:

- a roll of filter paper for receiving the substance;
- a roll of film providing an impermeable barrier for isolating the substance; and
- an archive spool for collecting the roll of filter paper and the roll of film.

10. The method as set forth in claim 1, wherein the remote sensing units are deployed by being airdropped into an area containing a potentially hazardous substance.

11. The method of claim 10, wherein the remote sensing units act upon hitting ground to properly position various operational elements of the remote sensing units for sample collection.



**IX. EVIDENCE APPENDIX**

None.

**X. RELATED PROCEEDINGS INDEX**

None.